

The RAD WASTE NEWS

Volume 9, Issue 2

April 1999

EXEMPT WASTE - WHAT DOES THAT MEAN? *By Dave Horton*

When we at the DOD Executive Agency for Low-Level Radioactive Waste receive a requirement to dispose of some radioactive material, we assign the project to a member of the Operations Team in the Safety/Rad Waste Team located at the Headquarters, Industrial Operations Command in Rock Island, IL. The Operations Team reviews the request for disposal to determine the best way to dispose of the waste. Factors we must consider include where we generated the waste and the specific type of waste.

Before last year, other than Naturally-Occurring and Accelerator Produced Radioactive Material (NARM), the only radioactive material that we disposed of at the State of Washington, Hanford Reservation was waste from the Northwest and Rocky Mountain Compacts.

For the past year, we disposed of some

of our waste at the State of Washington, Hanford Reservation under Exempt permits. The prior option was to dispose at the Barnwell, South Carolina facility at up to 4 times the cost at Hanford. This waste does not have to be from the Northwest or Rocky Mountain Compacts. The main category of waste that we are disposing is Mag-Thor or magnesium-thorium alloys. This brings us to the question in the title of this article; what does "exempt waste" mean?

For one definition, look in Title 10, Code of Federal Regulations, Section 40.13 (10CFR40.13), under the heading of "Unimportant quantities of source material." There are many items included in this section. Among the exemptions are thorium in incandescent gas mantles, uranium in counterweights and the main one that we have been using recently,

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LAKE CITY AAP DECOMMISSIONING UPDATE *by Mike Styvaert*

Last September, after 32 months of negotiations, meetings, questions and re-writes, the Nuclear Regulatory Commission (NRC) Headquarters approved our phase I decommissioning plan for the Lake City Army Ammunition Plant (LCAAP) firing range. Unfortunately, that was the easy part.

The LCAAP (Independence, MO) firing range is an operational test range for small caliber conventional munitions testing. Years ago the installation tested and demilitarized depleted uranium (DU) ammunition on the range. We manage the NRC license (SUC-1380) that covers the

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Also in this issue:

- The latest update on tritium recycling.
- Late breaking news on the Lake City clean-up.
- The human side of Government travel.
- From the Desk of the Chief
- A Primer on Mixed Waste
- The East Coast Run What and Where?
- Pictures from the Ninth Annual DOD Generators Meeting in Albuquerque

FROM THE DESK OF THE CHIEF

As readers of this newsletter, you know of the Executive Agency mission that we have for disposal of low-level radioactive waste for the Department of Defense. Few of you may know about another mission we have for the Army. That mission is the retrograde of radioactive contaminated equipment. A soon to be published Army regulation codifies what we did during Operation Desert Storm. We have a standby team to provide combat/non-combat world-wide response for accidents/incidents involving the retrograde of radioactive contaminated equipment. The team that does this is called the Army Contaminated Equipment Retrograde Team or ACERT.

We are developing and providing plans for retrograde of contaminated equipment as required to support Army operations. When deployed, our team acts as the primary point of contact for retrograde of Army contaminated material and low-level radioactive waste disposal. We respond to requests for assistance for Army major commands with contaminated equipment who have no means for disposition. When requested, we provide on-site assistance to commanders and Radiation Safety Officers with contaminated equipment. In a theater of operations, we will operate a central contaminated equipment storage and control area under the direction of the Army theater commander. We will take possession of con-

We are still looking for reservists with skills in transportation, ordnance, and nuclear medicine to round out the teams.

taminated equipment waiting for retrograde from the theater of operations. We will also provide technical assistance on the use, storage, and disposal of radioactive and mixed waste materials as related to contaminated equipment. As a part of our service, we will provide technical assistance on maintaining the health and safety of personnel handling contaminated equipment.

The ACERT consists of a team chief from our Safety/Rad Waste Team, team members from our organization, contract personnel as needed, and Army reserve personnel. We have both Individual Mobilization Augmentees and reservists who belong to the Army Materiel Command Logistics Support Element. To date, we have not fully staffed the two ACERTs, one for each potential Major Theater Conflict. We are still looking for reservists with skills in transportation, ordnance, and nuclear medicine to round out the teams.

We are ready to deploy on short notice to incidents in-



From the desk of the Chief of the
DOD Executive Agency for LLRW
Rosalene E. Graham, CSP
DSN 793-2989 Commercial (309) 782-2989
Email GRAHAMR@IOC.ARMY.MIL

volving radioactive material and waste contamination. These may include

- Combat situations involving wheel or tracked vehicles and accidents or incidents involving depleted uranium contamination and radioactive commodities.
- Non-combat situations like fire/incidents or accidents involving wheel or tracked vehicles, where the presence of radioactive materials or mixed waste has been confirmed.
- Accidents involving fire control devices, chemical agent detectors/monitors, and soil moisture density testers or other radioactive commodities where the likelihood of radioactive contamination has been confirmed.
- Any storage or transportation incident or accident in which ammunition containing depleted uranium has been involved.
- And structural incidents in which radioactive materials or mixed waste are involved.

We are training our team members to handle contamination of all types of Army equipment. ACERT services are available through the Army Operations Center with taskings coming through operational channels. We are a vital asset for the Army as we plan for future contingencies.

Rosalene Graham

LATEST ON TRITIUM RECYCLE *By Kelly Crooks*

We keep inching along in the quest to make a deal for recycle of tritium. We just hit one major milestone on 11 Feb 99 by signing a Memorandum of Understanding (MOU) with the Department of Energy's Lawrence Livermore National Laboratory (LLNL). The MOU formalizes our agreement to send virtually any tritium device to LLNL for disassembly, recovery of the tritium from the sources, storage of the recovered tritium by Westinghouse Savannah River Company, and reuse of the tritium by the DOE. Highlights include:

- **Cost.** The LLNL can only charge to recover their operational costs. Their initial estimate is an average cost of \$1000/curie based on a 4 year agreement. We have identified funds for FY99.
- **Shipment Notification.** The only additional requirement to normal shipping procedures is to get LLNL authorization before shipment.
- **Acknowledgement of Receipt.** For each shipment received, the LLNL will send a receipt to the IOC.

- **Reports.** The LLNL will provide the IOC a quarterly summary report of project activities.
- **Reuse of Tritium.** The DOE will not use the recovered tritium in nuclear weapons programs. This is in response to a Canadian non-proliferation law on the export of tritium. Some of our sources are made in Canada.

So, we're ready to start the program. We've been delaying some shipments until this was in place and appreciate those generators' patience. We think it was worthwhile and hope you do too. The agreement will save the DOD disposal costs while also providing the DOE with needed tritium. It also gives us a central site to send tritium devices vs the multiple facilities we've been using to get the best deals for each item.

We have some things in the works for getting small shipments to LLNL and will report on that in the next newsletter.

THE EAST COAST RUN *by Judy Woodson*

Every quarter the Safety/ Rad Waste Team conducts a pick up of mixed waste generated by installations on the East Coast. Mixed waste is a mixture of radioactive and hazardous waste and regulated by the Nuclear Regulatory Commission and the Environmental Protection Agency. Title 40, Code of Federal Regulations, Section 262.34(a) states that a generator may accumulate hazardous waste on-site for 90 days or less without a permit. Therefore from the first day of accumulation the generator has up to 90 days to transport the waste off-site to a treatment or disposal facility. If the waste remains on-site after the 90-day timeframe, the installation is in violation and could face fines up to \$20,000 per day.

Walter Reed Army Medical Center, tenants at Aberdeen Proving Grounds and Fort Detrick are our on-going customers that generate mixed waste. The waste is generally scintillation fluid containing toluene or xylene contaminated with radioactive material such as C-14, Cl-30, Cr-51, In-111, I-125, P-32 and/or S-35. We have also disposed of pump oil contaminated with H-3. Normally an IOC Health Physicist and a contractor broker will inspect, package, and ship the waste to a mixed waste processing facility such as Perma-Fix, NSSI or DSSI for treatment and disposal. During the East Coast Run we also pick-up radioactive materials from various installations for processing at the Chem-Nuclear Consolidation Facility and ultimate disposal at Barnwell. For more information contact Judy Woodson at DSN 93-188, Commercial (309) 82-188, E-mail address is Woodson@ioc.army.mil.

(Exempt Waste...continued from page 1)

magnesium-thorium alloys in finished products or parts. The magnesium-thorium alloy exemption requires that the weight of thorium in the alloy be less than 4 percent by weight. We can prove that we meet this criterion either through process knowledge of the alloys in manufacturing an item or by laboratory analysis of the waste stream. Another location for "exemptions" is Title 10, Code of Federal Regulations, Section 30.1. This section covers byproduct material. Again, this section covers many items and includes details not covered in this article. Recently we disposed of electron tubes that are "exempt" under this section.

The cited Title 10 references provide licensing and possession exemptions. If we have materials that meet these exemptions, we can apply to the State of Washington, through the Hanford facility-operating contractor, U.S. Ecology, for an Exempt determination of the material. Once we have received that determination, and applied for and received a disposal permit, we can dispose of the Exempt material.

I would encourage you to read the regulations yourself if you are interested. You can access these regulations on the Internet by using the following link: <http://www.access.gpo.gov/nara/cfr/cfr-retrieve.html> page1. Just fill in the cited references; 10CFR40.13 or 10CFR30.1. If you have any questions on this subject, you can contact David Horton at (309) 82-109, DSN 93-109, or HortonD@ioc.army.mil.

A MIXED WASTE PRIMER

by Bill Metcalf

Every year the DODEA responds to questions pertaining to the treatment, storage, and disposal of mixed waste. The following discussion provides some answers to customer's questions on mixed waste management.

First question - What is mixed waste? It is waste that contains both a hazardous and a radioactive component. The hazardous waste is listed under 40 CFR Part 261, Subpart D, and/or exhibits a characteristic described in 40 CFR Part 261, Subpart C. The radioactive material must be classified as source, special nuclear, or byproduct material subject to the Atomic Energy Act (AEA) of 1954.

How is mixed waste regulated and who regulates it?

Mixed waste is jointly regulated under the Resource Conservation Recovery Act (RCRA) and the AEA. The RCRA covers the hazardous waste portion of the waste stream, and the AEA regulates the RCRA-exempt radioactive portion. The Environmental Protection Agency (EPA), Nuclear Regulatory Commission (NRC), and Department of Energy (DOE) regulate mixed waste. The NRC and DOE regulate the radioactive portion and EPA regulates the hazardous portion. The NRC usually regulates mixed wastes from commercial and non-DOE facilities. Waste handlers should consult the appropriate regulatory agencies and guidance to determine if they have mixed waste. Once a waste is determined to be a mixed waste, the waste handler must comply with both RCRA and AEA regulations. The requirements of RCRA and AEA are generally consistent and compatible. However, the provisions in Section 100 (a) of RCRA allow the AEA to take precedence if provisions or requirements of the two acts are inconsistent.

Nuclear power plants, industrial sites, research labs, medical facilities, etc. generate mixed wastes. Examples of mixed waste streams include liquid scintillation cocktails, organic solvents, corrosive organics, toxic metals, etc. contaminated with a radioactive component. Mixed waste is subject to RCRA hazardous waste regulations, including the land disposal restrictions. Treatment standards for hazardous wastes are found in 40 CFR 268.40 of the RCRA regulations. Special treatment standards are listed for mixed wastes such as elemental mercury (D009) contaminated with radioactive materials. Normal treatment standards apply for waste codes when no special standards are listed.

Generators must take time to make sure their waste stream is correctly characterized. Low-level radioactive waste that contains hazardous constituents may not necessarily be mixed low-level waste. Remember, mixed low-level waste is low-level waste that contains a known

hazardous waste (a listed hazardous waste) or exhibits one or more of the hazardous characteristics. A generator can use knowledge of the waste characteristics or the process that generates the waste to determine if a mixed waste stream exists.

For further information or questions regarding your waste streams, contact Mr. Bill Metcalf, DSN 93-2248, email metcalfw@ioc.army.mil.

(Lake City Update.. continued from page 1)

DU metal and contaminated soil that remains on the range and in the surrounding grounds at LCAAP. In 1993 a contractor conducted a comprehensive characterization of depleted uranium (DU) contamination on and around the firing range.

The first phase of actual firing range decommissioning was to remove the DU and DU contaminated soil/sand from an abandoned range waste disposal area. Part of the Phase I decommissioning process was surveying and screening a large (estimated 200,000 ft³) sand pile at the south end of the disposal area. Our key assumptions were that all decommissioning waste (up to 30,000 ft³) would be acceptable at Envirocare of Utah as low-level radioactive waste (LLRW), i.e. the material would pass the Toxicity Characteristic Leaching Procedure (TCLP), and the 200,000 ft³ sand hill would be DU-free. In late November, we discovered both assumptions were incorrect. After screening about 20 percent of the sand hill, we discovered DU contamination several feet below grade. A few days later Envirocare notified us that our initial shipment of decommissioning waste had failed their criteria for leachable lead. We demobilized our decommissioning contractor in late December to re-evaluate our options.

Now instead of having a relatively small volume of LLRW, we're facing a potentially huge volume of mixed waste. In addition, there have been several new decommissioning regulations that the NRC has promulgated since we issued our 1994 characterization report. We're currently researching historical environmental records for the area to re-evaluate the hazard posed by the lead. The risk to the public and environment as a result of the lead levels will likely determine our fate for the NRC decommissioning.

Whatever the final decommissioning outcome, we've learned several valuable lessons as a result of this unfortunate turn of events. First and foremost is that you can never have too much characterization data. In retrospect, we should have relied less on historical process knowledge (or in this case process theory) and concentrated more on a physical depth characterization. Our waste profiling program was inadequate. Although we

LAKE CITY WASTE



Packaged.....



st aged.....

Ready to ship



(Lake City Update...continued from page 4)
sampled the area on two separate occasions for lead and both times came well within the acceptable limits, the waste exceeded limits after we shipped it to the burial site. Next time we'll sample the actual extracted waste prior to making any shipments. We failed to realize that TCLP acceptance analysis at Envirocare is what they call a deferred chemical analysis. By the time En-

virocare discovered and notified us that the LCAAP waste had failed TCLP, they had already placed it in the LLRW disposal cell. Disposal prior to having the deferred chemical analysis is perfectly acceptable in accordance with Envirocare's Waste Acceptance Criteria and their operating license. It won't however, be acceptable in accordance with future IOC disposal scopes of work.



SCENES FROM THE NINTH ANNUAL DOD GENERATORS MEETING IN ALBUQUERQUE



ROSALENE GRAHAM KICKS THE CONFERENCE OFF



JOHN VINCENTI GIVES THE KEYNOTE ADDRESS



KRIS BELL INTRODUCES ONE OF THE SPEAKERS



WASTE CONTROL SPECIALIST (LEFT TO RIGHT: RICHARD TOBERMAN, DAN BELGER AND BILL DORNSIFE) SPONSORS OF OUR GET ACQUAINTED RECEPTION



HOMLES BROWN OF THE LLW FORUM INTRODUCES THE COMPACT PANEL: LEFT TO RIGHT .KATHRYN HAYNES, SE COMPACT; MIKE GARNER, NW COMPACT; LEE MATTHEWS, TEXAS COMPACT; AND DON WOMELDORF, SW COMPACT



AL RAFATI BROUGHT US UP TO DATE ON ENVIROCARE



JULIE PETERSON, USACE, FIELDS A THOUGHTFUL QUESTION ON HER PRESENTATION ON ALTERNATE DISPOSAL OPTIONS

CAPT EVIE CORNELL UPDATES THE AUDIENCE ON AIR FORCE LLRW PROGRAM



THE OTHER SIDE OF TDY

BY BILL HUBER

Another Saturday of travel. It's early spring of 1992; the Boston area winter has been especially cold and wet. I'm sitting in the waiting area of Boston's Logan International Airport having a cup of coffee wondering why I allowed SATO to book such an early Saturday morning flight. I look out at the drizzle and think I should still be sleeping. Out on the tarmac unusual activity is taking place. A military band is gathering in the drizzle. A van from a Plymouth, MA. Veterans organization pulls to the front of the tarmac. A wide-bodied aircraft makes its final turn from the taxiway to the gate area. The arrival of a flight from Hawaii and Los Angeles is announced over the loud speaker. The aircraft stops and cuts the engines. Ground crews attach ground support systems to the aircraft. The band is brought to attention. An honor guard composed of military and veterans organizations are brought to order as the band begins to play. I can't hear the music. Inside the waiting area most of the passengers are looking at the tarmac activities. The honor guard marches and positions itself at the first cargo compartment. An announcement over the Logan Airport loudspeaker requests a moment of silence as the remains of a pilot shot down early in the Vietnam war are returned to mainland USA soil. A hearse appears, the cargo door is opened, a flag draped coffin is lifted by the honor guard, an MIA is on home soil. A soft thank you is heard over the loud speaker. The airport returned to normal. The honor guard places the coffin in the hearse for the trip to Plymouth MA. The passengers disembark from the aircraft.

I think of that moment of silence, a moment on the other side of TDY.

DEPARTMENT OF ARMY

AMSIO-SF

Headquarters, Industrial Operations Command

Rock Island Arsenal

Rock Island, IL 61299-6000

OFFICIAL BUSINESS

Mailing
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Here

SERVICE AND AGENCY POINTS OF CONTACT

Air Force:	CPT Maridee Cornell (210) 536-3489 IERA/DRH Brooks AFB, Texas 78235-5114	USACE:	Dr. Reuben Sawdaye (202) 761-8881 Corps of Engineers CEMO-RT, 20 Massachusetts Ave, NW Washington, DC 20314
Navy:	Ms. Laurie Miller (757) 887-4692, % Naval Sea Systems Command Detachment, Radiological Affairs Support Office Yorktown, VA 23691-5098	DLA:	Mr. Mike Coogen, DLA-WH (703) 767-6231/6300 Defense Logistics Agency Ft. Belvoir, VA 22060-6221
Army: You can reach us at HQ, IOC, AMSIO-SF, Rock Island Arsenal, IL 61299-6000 or via EMAIL at conleyr@ioc. amry.mil - 309-782-0171 or DSN 793-0171 or the WORLD WIDE WEB at http://www.ioc.army.mil/dm/DMWWEB/indexdmw.htm			

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Richard D. Conley, Editor